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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,386	09/03/1999	PATRICK IZQUIERDO	225/48098	5368

7590 04/14/2004

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EXAMINER

NGUYEN, TRINH T

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/389,386

Applicant(s)

IZQUIERDO ET AL.

Examiner

Trinh T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4,10,11 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,4,10,11 and 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 4, 10, 11, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirt (US 4,625,465) in view of Palazzolo et al. (US 5,691,004).

Kirt teaches a method for surface treatment of an interior of a hollow body such as an engine cylinder bore (10), wherein the method comprising the step of dry-cutting, i.e., honing, milling, drilling, brushing, knurling, and/or abrading, the interior of the hollow body (11) by using a tool (23, 36) to remove a surface material therein (note that Kirt's method for surface treatment of an interior of a hollow body such as an engine cylinder bore does not require lubrication).

Kirt teaches the claimed invention but lacks the teaching of 1) thermally spraying a layer to the surface of the hollow body, i.e. engine cylinder bore, without prior degreasing or cleaning and 2) having "a roughness value of from 25 to 65 um".

Regarding 1), note in the Abstract, Palazzolo et al. teach that after the honing/dry-cutting step the interior surface of the hollow body is thermally sprayed with a coat in order to increase the wear resistance and the lubricity of the hollow body. Further note in lines 38-43 of col. 5, Palazzolo et al. also teach that the step of thermally spraying a layer onto the surface can be done without prior degreasing or cleaning. It

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would have been obvious to one of ordinary skill in the art at the time the invention was made to have thermally sprayed a layer onto a surface of Kirt's hollow body, without prior degreasing or cleaning, in a similar manner as taught in Palazzolo, for the purpose of increasing the wear resistance and lubricity thereof.

Regarding 2), it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the roughness set to a certain specific range as claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 4, it is noted that Kirt's tool includes the use of stones (37) in the honing process. However, it does not specifically indicate that the stone used in the tool comprises cubic boron nitride, polycrystalline diamond, a coated or uncoated hard metal of a ceramic. Palazzolo et al., on the other hand, disclose that a honing tool can be comprised of any hard material such as boron nitride, coated or uncoated metal, or even diamond so as to roughen the inner surfaces of a cylinder bore (see lines 1-20 of col. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the use of boron nitride, coated or uncoated metal, and/or diamond in Kirt's tool, in a similar manner as taught in Palazzolo, in order to efficiently roughen the inner surfaces of a engine cylinder bore.

Regarding claims 10 and 11, note that Kirt's tool (23, 36) can be interpreted as an indexing insert wherein the tool is fitted with a plurality of indexing inserts (27, 37).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 3, 4, 10, 11, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Shepley et al. (US 5,622,753).

Shepley et al. disclose a method of surface coating an interior side of a cylinder bore including removing, by dry cutting without a lubricant, a portion of a material forming the interior side of the cylinder bore to be coated, directly applying a thermally sprayed tribological layer to the surface, without prior degreasing or cleaning.

For claim 3, note that Shepley et al's dry cutting is by drilling, brushing, knurling, circular milling or combinations thereof (see lines 65-67 of col. 1 and lines 1-50 of col. 3).

For claim 4, note that Shepley et al's tool (10) comprises cubic boron nitride, polycrystalline diamond, a coated or uncoated hard metal or a ceramic (see lines 13-33 of col. 3).

For claims 10 and 11, note that Shepley et al's tool (10) can be interpreted as an indexing insert wherein the tool is fitted with a plurality of indexing inserts (15, 16).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepley et al. (US 5,622,753).

Shepley et al. disclose the claimed invention except for having "a roughness value of from 25 to 65 um". However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the roughness set to a certain specific range as claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Response to Arguments

7. Applicant's arguments filed 5/6/03 have been fully considered but they are not persuasive.

8. In response to Applicant's arguments regarding that neither Kirt nor Palazzolo teaches applying a thermally-sprayed tribological layer to the surface of the cylinder bore without cleaning or degreasing. The Examiner agrees that Kirt does not teach this above claimed step; however, as shown in lines 38-43 of col. 5, Palazzolo teaches that the step of washing and residue leaving solution (which is equivalent to the claimed feature of "cleaning or degreasing") is eliminated and only the steps of rough honing

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(which is equivalent to the claimed feature of "dry cutting" or "removing a portion of material forming the interior side of the cylinder bore") and bond coating (which is equivalent to the claimed feature of "thermally-spraying") are employed. In another words, Palazzolo teaches the steps of removing, by rough honing, a portion of material of the interior side of the cylinder bore and then applying a thermally sprayed top coat thereon without prior degreasing or cleaning. It is noted that Palazzolo (the secondary reference) was combined with Kirt (the primary reference) to support the deficiency (i.e., the lacking of "applying a thermally-sprayed tribological layer to the surface, without cleaning or degreasing) of Kirt.

9. Applicant further argues that Palazzolo teaches that the elimination of certain steps would provide an inferior product. However, whether or not the product is inferior is an issue unrelated to the claim. The main issue here is that Palazzolo teaches the steps of removing, by rough honing, a portion of material of the interior side of the cylinder bore and then applying a thermally sprayed top coat thereon without prior degreasing or cleaning.

10. In response to Applicant's arguments regarding that Shepley does not mention that its cutting and coating steps without prior degreasing or cleaning, the Examiner disagreed. Applicant is referred to paragraphs # 3-6 above for further explanation/support.

11. Furthermore, Applicant argues that Shepley cannot be interpreted to teach the absence of lubricants, degreasing or cleaning, since an interpretation is not supported by Shepley or the state of the art in at the time the Shepley patent was filed. However,

whether or not the state of the art, at the time the Shepley patent was filed, processes utilized lubricants, degreasing or cleaning is an issue unrelated to the claim. The reference Shepley clearly teaches a method of surface coating an interior side of a cylinder bore including removing, by dry cutting without a lubricant, a portion of a material forming the interior side of the cylinder bore to be coated, directly applying a thermally sprayed tribological layer to the surface, without prior degreasing or cleaning (see lines 10-34 of col. 5).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh T Nguyen whose telephone number is (703) 306-9082. The examiner can normally be reached on M-F (9:30 A.M to 6:00 P.M).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Jordan can be reached on (703) 306-4159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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4/9/04


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